REMARKS

This responds to the final Office Action mailed April 7, 2005. Claims 7 and 10-12 remain pending; claim 7 is the only independent claim.

As is described in the background section of the present application, e.g., at page 4, lines 1-10, homomorphic filters have traditionally been implemented using high-pass filters on the image data, in order to filter the low-frequency "lightsource" data from the image. The data are transformed into the frequency domain, high-pass filtered, and then inversely transformed back to the spatial domain. As is also described, this conventional high-pass homomorphic filtering cannot be performed on sub-sampled or down-sampled image data to decrease processing time because the sub-sampled and high-pass filtered data must then be up-sampled to return the image to its original size. Unfortunately, it has been found that up-sampling of *high-pass filtered data* is very unreliable and sensitive to image noise. As a consequence, conventional high-pass homomorphic filtering is performed on the full-size (not sub-sampled) image data which is very slow and unsuitable for modern image reproduction (printing/copying) applications where throughput must be maximized.

The Lieberman et al. document (U.S. Patent No. 5,185,671) is directed to exactly such a conventional high-pass homomorphic filtering system as described at col. 4, line 36 - col. 5, line 15 thereof. The Lieberman et al. document does not disclose or suggest that sub-sampled data can be used in the homomorphic filtering operation. This is acknowledged by the Examiner in the April 7, 2005 Action at page 5, line 25 - page 6, line 7.

It is important to note that, with conventional high-pass homomorphic filtering such as disclosed in the Lieberman et al. document, the high-pass filtering, itself, directly removes the

effects of the lightsource from the image data, *there is no need to perform a subsequent subtraction or division or other "removal" operation on the original input data, i.e., the high-pass filter removes the effects of the lightsource directly. This is in contrast to the method defined in claim 7 where the lightsource data must first be derived and then removed from the original data in a secondary operation.*

The Aach et al. document (U.S. Patent No. 6,173,084) relates to an image processing method for reducing noise in an image. The Aach document does not relate to homomorphic filtering. The Aach et al. document does not mention or even suggest deriving lightsource data from input image data and, therefore, does not disclose any removal operation for removing the effects of the lightsource data from the original input data (such as by subtraction specified in dependent claim 10 or division as specified in dependent claim 11). Instead, the image processing of Aach et al. is concerned with removing noise artifacts from image data, without removing important information as is critical in connection with medical diagnostic images. In an effort to identify noise, the image is separated into multiple resolution levels and a comparison is made between image features of the various resolution levels in order to identify noise artifacts to be filtered from each image level. An output image is then constructed by combining the filtered images. As part of this process, Aach et al. disclose use of low-pass filtering in combination with sub-sampling, but nothing in the Aach et al. document discloses or fairly suggests a low-pass alternative to conventional high-pass homomorphic filtering as defined in amended claim 7.

Based upon these distinctions, independent claim 7 is respectfully submitted to define patentably over the Lieberman et

al. and Aach et al. documents. *Dependent claims 10 and 11 are also submitted to define allowable subject matter, because these claims define the method further as including a subtraction operation (claim 10) or a division operation (claim 11) in order to remove the effect of the previously-derived lightsource data from the input data to derive the enhanced data.* Such steps are not disclosed or suggested by any document of record. The Lieberman et al. method uses the conventional high-pass filter which directly removes the low-pass lightsource data from the full-scale (not sub-sampled data) without requiring any subsequent subtraction/division step, while the Aach et al. document is unconcerned with deriving or removing the lightsource data. As such, a Notice of Allowance is respectfully requested.

Respectfully submitted,

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